

U.S. Application No. 10/526,101 -- 4

In the Specification:

Amend the specification as follows:

Insert the following paragraphs on page 1, line 2 after the title of the invention:

CROSS-REFERENCE TO RELATED APPLICATION

This application is a national phase application of International Application No. PCT/FI2003/000680 filed September 18, 2003.

Amend the paragraph beginning on page 3, line 17 to read as follows:

The frame of the feed track 14 is installed on articulated arms 13. The feed track 14 is a 3-row roller chain fitted around a drive sprocket, a turnover member, and roll[[ing]] guides, which extend over a great length of the gripping side, between the drive sprocket and the turnover member.

Amend the paragraph beginning on page 3, line 23 to read as follows:

The weight of the timber harvester can be reduced by making smaller crawler-track feeder devices. The pressure, on the surface of the timber, of a crawler track rolling even on a curved base is not too great, even though the contact surface between the track and the timber is shorter than in a feeder device equipped with a straight roll[[ing]] base. The reduction in weight is therefore limited only by the surface pressure between the crawler track and its base and subsequently by the wear of their components that roll mutually relative to each other.

Amend the paragraph beginning on page 3, line 34 to read as follows:

In the feeder device according to the invention, the crawler track is a 3-row track. Though the chain can be a traditional 3-row roller chain, in which the links are next to each other, they are preferably staggered relative to each other (WO 85/05589), in order to

equalize the loading. The drive sprocket is located at the middle row 17.2, so that the dimensions of the construction of this row is based on the drive event. Both the outer rows 17.1 of the crawler track are, in turn, equipped with rollers of the greater possible diameter. This creates a 3-row crawler track, in which the diameter of the rollers of the inner row is a maximum of 80% of their spacing and usually less. In turn, the rollers of the outer rows have a diameter that is at least 85% of the spacing of the elements of the crawler track. In practice, the roller diameter of the inner row of the roller chains is about 70% of the spacing. In the outer rows, a diameter that is 85 – 95% of the spacing can be preferably used. It can be stated that in general the outer rollers 33.1 have a diameter 10 – 25% greater than that of the middle rollers 34.1. Preferably, at least the outer rollers 33.1 are equipped with bushings 33.3.

Amend the paragraph beginning on page 4, line 19 to read as follows:

If the diameter of the outer row increases, the surface pressure against the roll[[ing]] base will decrease, the velocity between the roller and the internal bushing will decrease, and simultaneously the mutual rolling distance between them will decrease. This all increases the life of the crawler track. But now the roll[[ing]] base (except for the middle row) can also be advantageously made in the form of plates, without separate rails. As the rollers of the outer rows are large, the outer surface of the roller is pushed outside of the outer surface of the side plates. No space is then required on the roll[[ing]] base for the side plates of the outer rows. A roll[[ing]] base of this kind can be manufactured effectively using large blades, even though more material must be removed than in a base equipped with grooves.

Amend the paragraph beginning one page 5, line 34 to read as follows:

Figure 2 shows one construction of feeder device 14 (cross-section B - B, Figure 3). In this case, the feeder device, which is seen in part cross-section from the side, is equipped with a curved roll[[ing]] base 22. The tree being processed is marked with the reference number 1. The crawler track is marked generally with the reference number 17 and is driven by a drive sprocket 24. At the opposite end, it travels around two idlers 25, which are, however, narrow in the area of the outer rollers and preferably have truncated teeth. The idler can, however, also be smooth, or be replaced entirely with a roll[[ing]] guide. The teeth 24.1 of the drive sprocket 24 transmit power to the middle row of links of the crawler track 17. The need for these teeth 24.1 to fit between the opposing rollers limits the size of the rollers relative to their spacing. This limitation does not apply to the outer rows of links, and in them the diameter of the rollers can approach the dimension of their spacing.

Amend the paragraph beginning on page 5, line 15 to read as follows:

Figure 3 shows a top view of the feeder device 14, with the crawler track 17 nearly entirely removed and partly cut open. The figure shows the roll[[ing]] base 22, the drive sprocket 24, the hydraulic motor 19 that rotates it, the suspension arm 13.2 of the feeder device, the suspension joint [[19]] 18, and the idlers 25. The crawler track 17 fills the space between the frame side plates 14.2 ~~of the frame~~ with a small tolerance. Preferably, the crawler track 17 is staggered according to the figure. The pin 17.4 locked to the crawler side plates 17.3 ~~of the crawler track 17~~ secures the links 33.2 and 34.2 in such a way that the links 34.2 of the middle row 17.2 are 'in the same phase' as the crawler side plates [[33.2]] 17.3, while the links 33.2 of the outer rows ~~of links~~ 17.1 are staggered relative to them. The detachable roll[[ing]] base 22 is substantially narrower than the crawler track 17, so that at least the crawler side plates 17.3 have plenty of space to move.

Amend the paragraph beginning on page 5, line 32 to read as follows:

Figure 4 shows a cross-section of the feeder device, at the point A – A in Figure 2. The components 33.2 and 34.2 show the links of a 3-row chain. Component 17.3 is the side plate on both sides of the crawler track 17, i.e. the pin 17.4 is attached to them at both ends. In this case, the links ~~[[33.3]]~~ 33.2 and 34.3 are formed in a known manner from U-shaped pieces, with grip studs welded to the web. The links can also be made from separate side plates, with a web plate welded across their ends. The gripping members can be stud welded onto the web plate, or a plate-like piece.

Amend the paragraph beginning on page 6, line 7 to read as follows:

As will be noticed, the roller 33.1 in the links 33.2 is larger than the middle roller 34.1 in the links 34.2. These correspond to ~~the roll~~~~[[ing]]~~ guides or bands 22.1 and 22.2 of the roll~~[[ing]]~~ base. The roll~~[[ing]]~~ base 22 is otherwise uniform, but is thicker under the middle row, to raise the roll~~[[ing]]~~ band 22.2 to correspond to the smaller middle roller 34.1. The roll~~[[ing]]~~ base can also be partial and divided (not shown). In this case, bolts 22.3 are used to make it detachable, but a welded joint can also be used.

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Amend the paragraph beginning on page 6, line 16 to read as follows:

The roll~~[[ing]]~~ guides are preferably curved, with their curvature corresponding to a radius of about 1 ~~metre~~ meter, usually ~~[[0,8]]~~ 0.8 – ~~[[1,3]]~~ 1.3 m. The durability, mechanical operation, and adhesion properties will then be optimal.

Amend the paragraph beginning on page 6, line 21 to read as follows:

Roll guides 22.1 and 22.2 may include a carbon tempered wear surface for engaging tracks 14 and 17 respectively. Carbon tempering increases the low surface carbon content of steel to the level $[[0,65]]$ 0.65 – $[[0,9]]$ 0.9 %, in order to improve its hardenability and achieve a high surface hardness. In this case, the thickness of the carbonization layer is preferably in the range of 1 – $[[2,5]]$ 2.5 mm.